INCREASED HEIGHT AND IGF1 SERUM LEVELS IN CHILDREN WITH NON-NEUROFIBROMATOSIS TYPE 1 GLIOMAS

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INTRODUCTION

Gliomas are the most common solid tumors during childhood. For a few years now, our group has been working on the IGF system in pediatric central nervous system (CNS) tumors. During clinical follow-up of children suffering gliomas we noted that they grew above their midparental height centiles. Growth hormone excess has been described in children with neurofibromatosis type 1 (NF1) and optic pathway gliomas, but we were not able to find in the literature patients with gliomas without NF1, with this phenomenon.

AIM

The aim of our study was to describe the growth and IGFs/IGFBP3 serum profile in a large cohort of pediatric patients with gliomas (excluding NF1) compared to children with other CNS tumors.

METHODS

-Cross-sectional study.
-Inclusion criteria: All patients under 19 years of age with CNS tumors diagnosis in our hospitals between June 2012 and February 2020.
-Anthropometric data, medical and family history and images were retrospectively collected from medical records.
-Exclusion criteria: growth hormone deficiency (GHD) at tumor diagnosis, patients with NF1, craniopharyngiomas or other infratentorial tumors, children with “Russel syndrome” and patients with incomplete medical records.
-Data were expressed in SDS according to local references and Tanner status.

CONCLUSIONS

-This is the first report of IGFs/IGFBP3 in pediatric patients with gliomas without NF1.
-We demonstrated, in a large cohort of children with CNS tumors, that patients with gliomas are taller than expected when compared to patients with other CNS tumors at diagnosis. Further, their IGF1 and IGFBP3 serum levels are higher in this group as well.
-In the assessment of paediatric population with CNS tumours we should bear in mind that an important group of these patients have gliomas that are chronic, non-resectable tumours, with the potential to grow or relapse.
-The potential impact of elevated IGF1 levels in these children warrant further studies to explore the underlying mechanisms.

REFERENCES